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ARMORACIA LACUSTRIS (BRASSICACEAE) REDISCOVERED IN OHIO

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Armoracia lacustris (A. Gray) Al-Shehbaz & V. Bates (Lake Cress) is a heterophyllous mustard of aquatic habitats which occurs over an extensive area in eastern North America, ranging from Pennsylvania and Virginia west to the 95th meridian, south to Florida and Texas, and north to southern Canada. Within this broad distribution, *A. lacustris* is irregularly dispersed, and has been reported from widely scattered localities in nineteen states and two provinces. It has been proposed as a candidate for listing as federally endangered or threatened (Federal Register, 1990) due to its apparent rarity. This taxon has a confusing nomenclatural history, having been placed in six different genera. In recent years the name *Armoracia aquatica* (Eaton) Wieg. had been widely used for Lake Cress, but Al-Shehbaz and Bates (1987) demonstrated that this name is invalid, and proposed the new combination *Armoracia lacustris* (A. Gray) Al-Shehbaz & V. Bates.

Lake Cress was last collected in Ohio on 10 June 1936 by Floyd Bartley near Circleville, Pickaway County (Cooperrider, 1982). There have been no reports of this plant in Ohio since that time; as of 1990 it was listed as presumed extirpated by the Ohio Department of Natural Resources (Div. of Natural Areas and Preserves, 1990). Historical locations, almost all of which date from the late nineteenth century, are known from eight Ohio counties (Coshocton, Erie, Licking, Lorain, Lucas, Madison, Perry, Pickaway) based on surveys of CLM, GH, KE, MICH, MU, NY, OS, and PH. Published county dot maps of *Armoracia lacustris* in Ohio by Al-Shehbaz and Bates (1987) and Easterly (1964) included Clark County and omitted Perry County. I could not locate a specimen to substantiate the Clark County report, and OS contains an 1895 collection from Perry County.

On 19 June 1991, M. A. Moser, Jr., S. J. Stine and I were conducting field investigations of riparian habitats along St. Marys River in west-central Ohio. In an Ash-Maple floodplain woods in Mercer County, we located a population of *Armoracia lacustris* which contained ca. 180 fertile plants and numerous sterile rosettes. The plants were growing in wet soil of a seasonally inun-

dated, diassociated channel of the river, and were flowering and fruiting vigorously.

St. Marys River is a moderately large stream of low gradient (2.9′ per mile) (Div. of Water, 1960) which originates in western Auglaize County, Ohio and flows west and north to its confluence with the Maumee River, a major drainage of the Lake Erie basin. In Ohio, the St. Marys is characterized by a broad, well-forested floodplain with numerous oxbows and buttonbush swamps; it is one of the few remaining unchannelized rivers in western Ohio. Near Fort Wayne, Indiana, a low-lying divide known as the Maumee Terrace separates the St. Marys and Wabash drainages (Thornbury, 1958). During periods of extreme flooding, waters from the St. Marys drainage unite with the Mississippian drainage of the Wabash River through this divide (Greene, 1935), thus representing a potential migratory corridor for plants between the Mississippi River and Lake Erie drainages. *Armoracia lacustris* has been collected at several locations in the Wabash system in central and eastern Indiana (Deam, 1940).

Additional field surveys of the St. Marys River area during June and July by Moser and myself located a total of six separate populations of *Armoracia lacustris* (Figure 1), distributed in all three Ohio counties through which the St. Marys flows (Auglaize, Mercer, Van Wert). These populations range in size from ca. two dozen plants to 1000+ plants scattered over two to three acres at a site in Mercer County. All populations occur in old river channels now isolated from the St. Marys except during periods of flooding, when they are temporarily inundated. The oxbows in which *A. lacustris* grows are in semi-open riparian woodlands dominated by *Acer saccharinum* L. and *Fraxinus pennsylvanica* Marsh.; *Cephalanthus occidentalis* L. is always present in the wettest sections of these oxbows. Typical herbaceous associates include *Carex crus-corvi* Shuttlew., *C. lupulina* Muhl., *C. muskingumensis* Schwein., *C. tribuloides* Wahlenb., *Leersia lenticularis* Michx., *L. oryzoides* (L.) Swartz, *Ludwigia palustris* (L.) Ell., *Polygonum hydropiperoides* Michx., *Proserpinaca palustris* L., *Rorippa sessiliflora* (Nutt.) Hitchc., *Samolus floribundus* HBK., and *Saururus cernuus* L.

By mid-June, surface water was no longer present in the oxbow habitat, and *Armoracia lacustris* was growing in a soft, thick, muddy substrate in a loosely defined zone along the periphery of

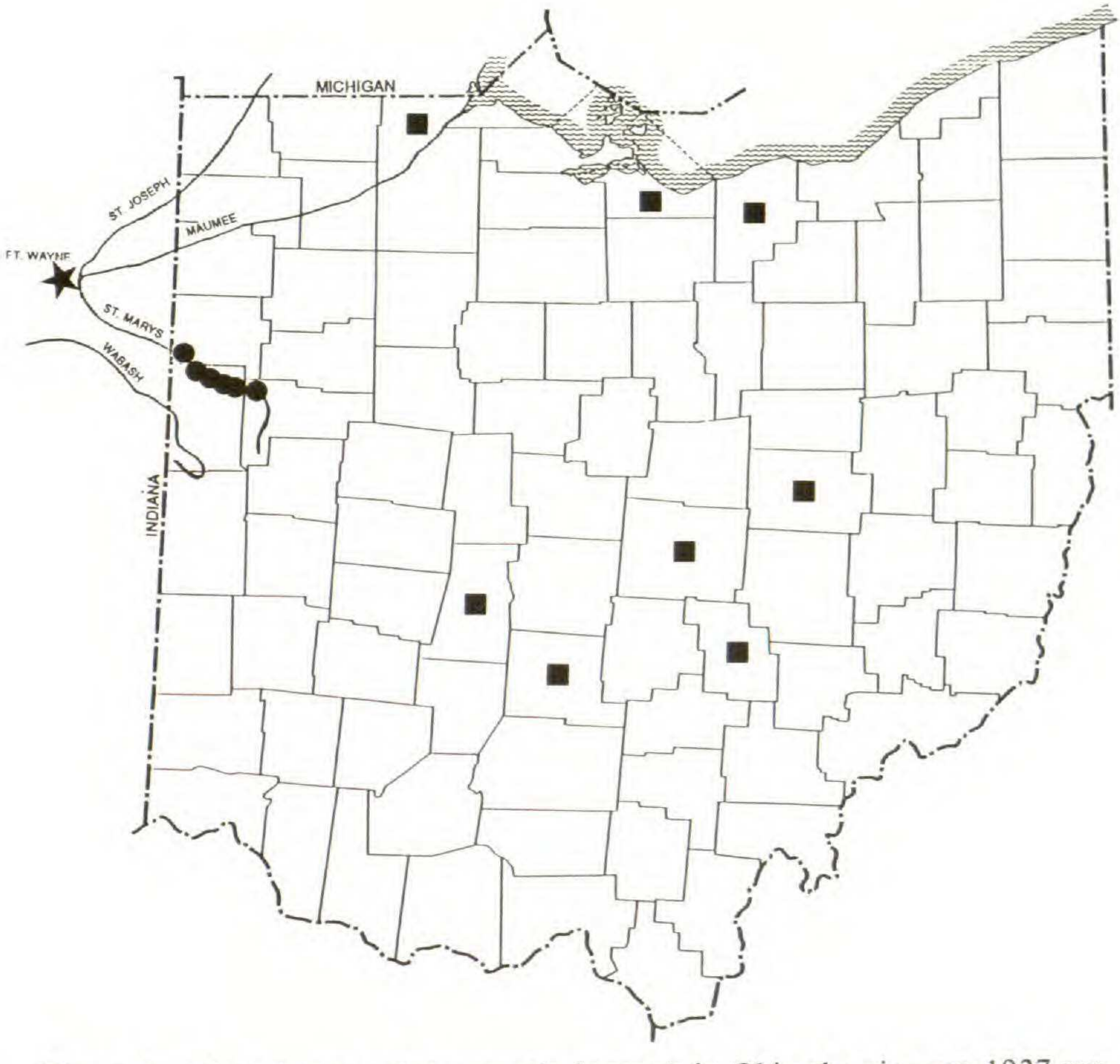

Figure 1. Distribution of *Armoracia lacustris* in Ohio showing pre-1937 records (■), and 1991 collection sites (●).

each oxbow. Sterile rosettes greatly outnumbered flowering and fruiting plants in all populations. Few mature seeds could be found by random examination of apparently well-developed fruits; reproduction in these populations was mostly, if not entirely, by vegetative means. Cauline leaves easily detach from the plants; soon after falling onto the soft muck, they send out roots and eventually form rosettes. LaRue (1942) described this method of regeneration in detail; leaves I collected and placed on moist potting soil also rooted and formed rosettes. The percentage of these rosettes which survive and develop into mature plants in the wild is not known.

Voucher specimens of *Armoracia lacustris* collected in this study are deposited in CLM, GH, KE, MICH, MU, NY, OS and PH.

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